

# Fritjof Helmchen

## List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

152  
papers

18,939  
citations

57  
h-index

137  
g-index

177  
ext. papers

22,582  
ext. citations

9.6  
avg. IF

6.97  
L-index

| #   | Paper  | IF   | Citations |
|-----|--|------|-----------|
| 152 | Estimating anisotropy directly via neural timeseries.. <i>Journal of Computational Neuroscience</i> , <b>2022</b> , 1  | 1.4  |           |
| 151 | Deep learning is widely applicable to phenotyping embryonic development and disease. <i>Development (Cambridge)</i> , <b>2021</b> , 148,   | 6.6  | 2         |
| 150 | Dendritic Branch-constrained N-Methyl-d-Aspartate Receptor-mediated Spikes Drive Synaptic Plasticity in Hippocampal CA3 Pyramidal Cells. <i>Neuroscience</i> , <b>2021</b> ,                       | 3.9  | 1         |
| 149 | Neural Systems Under Change of Scale. <i>Frontiers in Computational Neuroscience</i> , <b>2021</b> , 15, 643148  | 3.5  | 1         |
| 148 | Unsupervised behaviour analysis and magnification (uBAM) using deep learning. <i>Nature Machine Intelligence</i> , <b>2021</b> , 3, 495-506  | 22.5 | 2         |
| 147 | Calcium Imaging of CA3 Pyramidal Neuron Populations in Adult Mouse Hippocampus. <i>ENeuro</i> , <b>2021</b> , 8,   | 3.9  | 1         |
| 146 | 3D Reconstruction of the Clarified Rat Hindbrain Choroid Plexus. <i>Frontiers in Cell and Developmental Biology</i> , <b>2021</b> , 9, 692617  | 5.7  | 2         |
| 145 | Sensory and Behavioral Components of Neocortical Signal Flow in Discrimination Tasks with Short-Term Memory. <i>Neuron</i> , <b>2021</b> , 109, 135-148.e6   | 13.9 | 6         |
| 144 | Long-term self-renewing stem cells in the adult mouse hippocampus identified by intravital imaging. <i>Nature Neuroscience</i> , <b>2021</b> , 24, 225-233   | 25.5 | 31        |
| 143 | Brain mapping across 16 autism mouse models reveals a spectrum of functional connectivity subtypes. <i>Molecular Psychiatry</i> , <b>2021</b> ,  | 15.1 | 13        |
| 142 | A database and deep learning toolbox for noise-optimized, generalized spike inference from calcium imaging. <i>Nature Neuroscience</i> , <b>2021</b> , 24, 1324-1337                               | 25.5 | 10        |
| 141 | Conservation laws by virtue of scale symmetries in neural systems. <i>PLoS Computational Biology</i> , <b>2020</b> , 16, e1007865  | 5    | 4         |
| 140 | Spatiotemporal refinement of signal flow through association cortex during learning. <i>Nature Communications</i> , <b>2020</b> , 11, 1744   | 17.4 | 17        |
| 139 | In-Depth Characterization of Layer 5 Output Neurons of the Primary Somatosensory Cortex Innervating the Mouse Dorsal Spinal Cord. <i>Cerebral Cortex Communications</i> , <b>2020</b> , 1, tgaa052 | 1.9  | 2         |
| 138 | Opto-E-Dura: A Soft, Stretchable ECoG Array for Multimodal, Multiscale Neuroscience. <i>Advanced Healthcare Materials</i> , <b>2020</b> , 9, e2000814  | 10.1 | 17        |
| 137 | Developmental divergence of sensory stimulus representation in cortical interneurons. <i>Nature Communications</i> , <b>2020</b> , 11, 5729  | 17.4 | 5         |
| 136 | Value-guided remapping of sensory cortex by lateral orbitofrontal cortex. <i>Nature</i> , <b>2020</b> , 585, 245-250   | 50.4 | 38        |

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|-----|---|------|-----|
| 135 | Cortical Excitation:Inhibition Imbalance Causes Abnormal Brain Network Dynamics as Observed in Neurodevelopmental Disorders. <i>Cerebral Cortex</i> , <b>2020</b> , 30, 4922-4937 | 5.1  | 19  |
| 134 | Context-dependent limb movement encoding in neuronal populations of motor cortex. <i>Nature Communications</i> , <b>2019</b> , 10, 4812   | 17.4 | 12  |
| 133 | Layer-specific integration of locomotion and sensory information in mouse barrel cortex. <i>Nature Communications</i> , <b>2019</b> , 10, 2585                                    | 17.4 | 38  |
| 132 | High-density multi-fiber photometry for studying large-scale brain circuit dynamics. <i>Nature Methods</i> , <b>2019</b> , 16, 553-560  | 21.6 | 70  |
| 131 | iDISCO+ for the Study of Neuroimmune Architecture of the Rat Auditory Brainstem. <i>Frontiers in Neuroanatomy</i> , <b>2019</b> , 13, 15  | 3.6  | 11  |
| 130 | Temporal refinement of sensory-evoked activity across layers in developing mouse barrel cortex. <i>European Journal of Neuroscience</i> , <b>2019</b> , 50, 2955-2969             | 3.5  | 6   |
| 129 | Ossified blood vessels in primary familial brain calcification elicit a neurotoxic astrocyte response. <i>Brain</i> , <b>2019</b> , 142, 885-902                                  | 11.2 | 32  |
| 128 | Functional Architecture and Encoding of Tactile Sensorimotor Behavior in Rat Posterior Parietal Cortex. <i>Journal of Neuroscience</i> , <b>2019</b> , 39, 7332-7343              | 6.6  | 8   |
| 127 | Tissue Clearing and Light Sheet Microscopy: Imaging the Unsectioned Adult Zebra Finch Brain at Cellular Resolution. <i>Frontiers in Neuroanatomy</i> , <b>2019</b> , 13, 13       | 3.6  | 15  |
| 126 | The mesoSPIM initiative: open-source light-sheet microscopes for imaging cleared tissue. <i>Nature Methods</i> , <b>2019</b> , 16, 1105-1108                                      | 21.6 | 83  |
| 125 | Live imaging of neurogenesis in the adult mouse hippocampus. <i>Science</i> , <b>2018</b> , 359, 658-662  | 33.3 | 159 |
| 124 | Fiber-optic implant for simultaneous fluorescence-based calcium recordings and BOLD fMRI in mice. <i>Nature Protocols</i> , <b>2018</b> , 13, 840-855                             | 18.8 | 39  |
| 123 | Neocortical dynamics during whisker-based sensory discrimination in head-restrained mice. <i>Neuroscience</i> , <b>2018</b> , 368, 57-69  | 3.9  | 11  |
| 122 | Behavioral Strategy Determines Frontal or Posterior Location of Short-Term Memory in Neocortex. <i>Neuron</i> , <b>2018</b> , 99, 814-828.e7                                      | 13.9 | 56  |
| 121 | Prion pathogenesis is unaltered in a mouse strain with a permeable blood-brain barrier. <i>PLoS Pathogens</i> , <b>2018</b> , 14, e1007424  | 7.6  | 6   |
| 120 | Sensory representation of an auditory cued tactile stimulus in the posterior parietal cortex of the mouse. <i>Scientific Reports</i> , <b>2018</b> , 8, 7739                      | 4.9  | 9   |
| 119 | An R-CaMP1.07 reporter mouse for cell-type-specific expression of a sensitive red fluorescent calcium indicator. <i>PLoS ONE</i> , <b>2017</b> , 12, e0179460                     | 3.7  | 29  |
| 118 | Specific excitatory connectivity for feature integration in mouse primary visual cortex. <i>PLoS Computational Biology</i> , <b>2017</b> , 13, e1005888                           | 5    | 3   |

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|-----|---|------|-----|
| 117 | Layer-Specific Refinement of Sensory Coding in Developing Mouse Barrel Cortex. <i>Cerebral Cortex</i> , <b>2017</b> , 27, 4835-4850   | 5.1  | 33  |
| 116 | Optogenetically stimulating intact rat corticospinal tract post-stroke restores motor control through regionalized functional circuit formation. <i>Nature Communications</i> , <b>2017</b> , 8, 1187 | 17.4 | 32  |
| 115 | In-vivo imaging of neural activity with dynamic vision sensors <b>2017</b> ,  |      | 2   |
| 114 | Multiphoton in vivo imaging with a femtosecond semiconductor disk laser. <i>Biomedical Optics Express</i> , <b>2017</b> , 8, 3213-3231  | 3.5  | 29  |
| 113 | Stimulus relevance modulates contrast adaptation in visual cortex. <i>ELife</i> , <b>2017</b> , 6,  | 8.9  | 27  |
| 112 | Functional Imaging of Dentate Granule Cells in the Adult Mouse Hippocampus. <i>Journal of Neuroscience</i> , <b>2016</b> , 36, 7407-14  | 6.6  | 58  |
| 111 | Dendritic NMDA spikes are necessary for timing-dependent associative LTP in CA3 pyramidal cells. <i>Nature Communications</i> , <b>2016</b> , 7, 13480  | 17.4 | 49  |
| 110 | Long-range population dynamics of anatomically defined neocortical networks. <i>ELife</i> , <b>2016</b> , 5,  | 8.9  | 73  |
| 109 | Spatially segregated feedforward and feedback neurons support differential odor processing in the lateral entorhinal cortex. <i>Nature Neuroscience</i> , <b>2016</b> , 19, 935-44                    | 25.5 | 72  |
| 108 | Pathway-specific reorganization of projection neurons in somatosensory cortex during learning. <i>Nature Neuroscience</i> , <b>2015</b> , 18, 1101-8  | 25.5 | 89  |
| 107 | Transgenic mice for intersectional targeting of neural sensors and effectors with high specificity and performance. <i>Neuron</i> , <b>2015</b> , 85, 942-58  | 13.9 | 631 |
| 106 | Sparse, reliable, and long-term stable representation of periodic whisker deflections in the mouse barrel cortex. <i>NeuroImage</i> , <b>2015</b> , 115, 52-63  | 7.9  | 15  |
| 105 | Specific Early and Late Oddball-Evoked Responses in Excitatory and Inhibitory Neurons of Mouse Auditory Cortex. <i>Journal of Neuroscience</i> , <b>2015</b> , 35, 12560-73                           | 6.6  | 79  |
| 104 | Model-based analysis of pattern motion processing in mouse primary visual cortex. <i>Frontiers in Neural Circuits</i> , <b>2015</b> , 9, 38   | 3.5  | 19  |
| 103 | A modular two-photon microscope for simultaneous imaging of distant cortical areas in vivo <b>2015</b> ,  |      | 5   |
| 102 | A single-compartment model of calcium dynamics in nerve terminals and dendrites. <i>Cold Spring Harbor Protocols</i> , <b>2015</b> , 2015, 155-67   | 1.2  | 18  |
| 101 | Imaging the Cortical Representation of Active Sensing in the Vibrissa System <b>2015</b> , 109-128  |      |     |
| 100 | Tactile frequency discrimination is enhanced by circumventing neocortical adaptation. <i>Nature Neuroscience</i> , <b>2014</b> , 17, 1567-73  | 25.5 | 48  |

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|----|---|------|-----|
| 99 | Neuronal repair. Asynchronous therapy restores motor control by rewiring of the rat corticospinal tract after stroke. <i>Science</i> , <b>2014</b> , 344, 1250-5  | 33.3 | 219 |
| 98 | High-speed two-photon calcium imaging of neuronal population activity using acousto-optic deflectors. <i>Cold Spring Harbor Protocols</i> , <b>2014</b> , 2014, 618-29  | 1.2  | 6   |
| 97 | Microcircuit dynamics of map plasticity in barrel cortex. <i>Current Opinion in Neurobiology</i> , <b>2014</b> , 24, 76-81  | 7.6  | 22  |
| 96 | Chronic Two-Photon Imaging of Neural Activity in the Anesthetized and Awake Behaving Rodent. <i>NeuroMethods</i> , <b>2014</b> , 151-173  | 0.4  | 5   |
| 95 | Neocortex in the Spotlight: Concepts, Questions, and Methods. <i>NeuroMethods</i> , <b>2014</b> , 3-18  | 0.4  |     |
| 94 | Two-Photon Imaging of Neuronal Network Dynamics in Neocortex. <i>NeuroMethods</i> , <b>2014</b> , 133-150   | 0.4  | 2   |
| 93 | Online correction of licking-induced brain motion during two-photon imaging with a tunable lens. <i>Journal of Physiology</i> , <b>2013</b> , 591, 4689-98  | 3.9  | 36  |
| 92 | The challenge of connecting the dots in the B.R.A.I.N. <i>Neuron</i> , <b>2013</b> , 80, 270-4  | 13.9 | 60  |
| 91 | Miniaturization of two-photon microscopy for imaging in freely moving animals. <i>Cold Spring Harbor Protocols</i> , <b>2013</b> , 2013, 904-13   | 1.2  | 60  |
| 90 | Barrel cortex function. <i>Progress in Neurobiology</i> , <b>2013</b> , 103, 3-27   | 10.9 | 230 |
| 89 | HelioScan: a software framework for controlling in vivo microscopy setups with high hardware flexibility, functional diversity and extendibility. <i>Journal of Neuroscience Methods</i> , <b>2013</b> , 215, 38-52 | 3    | 45  |
| 88 | Neuronale Netzwerke im Rampenlicht: Mit leuchtenden Proteinen zelluläre Aktivitätsmuster entschlüsseln. <i>E-Neuroforum</i> , <b>2013</b> , 19, 47-55   |      | 1   |
| 87 | Steady or changing? Long-term monitoring of neuronal population activity. <i>Trends in Neurosciences</i> , <b>2013</b> , 36, 375-84   | 13.3 | 73  |
| 86 | Two-photon imaging of spinal cord cellular networks. <i>Experimental Neurology</i> , <b>2013</b> , 242, 18-26   | 5.7  | 25  |
| 85 | Behaviour-dependent recruitment of long-range projection neurons in somatosensory cortex. <i>Nature</i> , <b>2013</b> , 499, 336-40   | 50.4 | 206 |
| 84 | Rapid 3D light-sheet microscopy with a tunable lens. <i>Optics Express</i> , <b>2013</b> , 21, 21010-26   | 3.3  | 233 |
| 83 | Inference of neuronal network spike dynamics and topology from calcium imaging data. <i>Frontiers in Neural Circuits</i> , <b>2013</b> , 7, 201   | 3.5  | 57  |
| 82 | Activity in a premotor cortical nucleus of zebra finches is locally organized and exhibits auditory selectivity in neurons but not in glia. <i>PLoS ONE</i> , <b>2013</b> , 8, e81177                               | 3.7  | 18  |

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|----|--|------|-----|
| 81 | Post hoc immunostaining of GABAergic neuronal subtypes following in vivo two-photon calcium imaging in mouse neocortex. <i>Pflugers Archiv European Journal of Physiology</i> , <b>2012</b> , 463, 339-54                      | 4.6  | 19  |
| 80 | Simultaneous BOLD fMRI and fiber-optic calcium recording in rat neocortex. <i>Nature Methods</i> , <b>2012</b> , 9, 597-602  | 21.6 | 167 |
| 79 | Distinct functional properties of primary and posteromedial visual area of mouse neocortex. <i>Journal of Neuroscience</i> , <b>2012</b> , 32, 9716-26   | 6.6  | 66  |
| 78 | Reorganization of cortical population activity imaged throughout long-term sensory deprivation. <i>Nature Neuroscience</i> , <b>2012</b> , 15, 1539-46   | 25.5 | 145 |
| 77 | Neuron to astrocyte communication via cannabinoid receptors is necessary for sustained epileptiform activity in rat hippocampus. <i>PLoS ONE</i> , <b>2012</b> , 7, e37320   | 3.7  | 30  |
| 76 | Selective regulation of NR2B by protein phosphatase-1 for the control of the NMDA receptor in neuroprotection. <i>PLoS ONE</i> , <b>2012</b> , 7, e34047   | 3.7  | 17  |
| 75 | Chronic imaging of cortical sensory map dynamics using a genetically encoded calcium indicator. <i>Journal of Physiology</i> , <b>2012</b> , 590, 99-107   | 3.9  | 36  |
| 74 | In vivo labeling of cortical astrocytes with sulforhodamine 101 (SR101). <i>Cold Spring Harbor Protocols</i> , <b>2012</b> , 2012, 326-34  | 1.2  | 33  |
| 73 | Two-photon imaging and analysis of neural network dynamics. <i>Reports on Progress in Physics</i> , <b>2011</b> , 74, 086602   | 14.4 | 18  |
| 72 | Measuring neuronal population activity using 3D laser scanning. <i>Cold Spring Harbor Protocols</i> , <b>2011</b> , 2011, 1340-9   | 1.2  | 4   |
| 71 | Fast two-layer two-photon imaging of neuronal cell populations using an electrically tunable lens. <i>Biomedical Optics Express</i> , <b>2011</b> , 2, 2035-46   | 3.5  | 223 |
| 70 | Calibration of fluorescent calcium indicators. <i>Cold Spring Harbor Protocols</i> , <b>2011</b> , 2011, 923-30  | 1.2  | 15  |
| 69 | Representation of visual scenes by local neuronal populations in layer 2/3 of mouse visual cortex. <i>Frontiers in Neural Circuits</i> , <b>2011</b> , 5, 18   | 3.5  | 40  |
| 68 | Calibration protocols for fluorescent calcium indicators. <i>Cold Spring Harbor Protocols</i> , <b>2011</b> , 2011, 980-4  | 1.2  | 6   |
| 67 | Enhancement of CA3 hippocampal network activity by activation of group II metabotropic glutamate receptors. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , <b>2011</b> , 108, 9993-7 | 11.5 | 21  |
| 66 | In vivo Ca <sup>2+</sup> imaging of dorsal horn neuronal populations in mouse spinal cord. <i>Journal of Physiology</i> , <b>2010</b> , 588, 3397-402  | 3.9  | 55  |
| 65 | High-speed in vivo calcium imaging reveals neuronal network activity with near-millisecond precision. <i>Nature Methods</i> , <b>2010</b> , 7, 399-405   | 21.6 | 357 |
| 64 | Representation of thermal information in the antennal lobe of leaf-cutting ants. <i>Frontiers in Behavioral Neuroscience</i> , <b>2010</b> , 4, 174  | 3.5  | 15  |

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| 63 | Miniaturized selective plane illumination microscopy for high-contrast in vivo fluorescence imaging. <i>Optics Letters</i> , <b>2010</b> , 35, 1413-5                                      | 3    | 35  |
| 62 | Optical recording of neuronal activity with a genetically-encoded calcium indicator in anesthetized and freely moving mice. <i>Frontiers in Neural Circuits</i> , <b>2010</b> , 4, 9       | 3.5  | 123 |
| 61 | Scanning fiber endoscopy with highly flexible, 1 mm catheterscopes for wide-field, full-color imaging. <i>Journal of Biophotonics</i> , <b>2010</b> , 3, 385-407                           | 3.1  | 189 |
| 60 | In Vivo Imaging of Cellular Network Signaling <b>2010</b> , 2753-2757  |      |     |
| 59 | Radially expanding transglial calcium waves in the intact cerebellum. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , <b>2009</b> , 106, 3496-501 | 11.5 | 130 |
| 58 | Optical probing of neuronal ensemble activity. <i>Current Opinion in Neurobiology</i> , <b>2009</b> , 19, 520-9  | 7.6  | 110 |
| 57 | Enhanced fluorescence signal in nonlinear microscopy through supplementary fiber-optic light collection. <i>Optics Express</i> , <b>2009</b> , 17, 6421-35                                 | 3.3  | 37  |
| 56 | Two-Photon Functional Imaging of Neuronal Activity. <i>Frontiers in Neuroscience</i> , <b>2009</b> , 37-58   |      | 8   |
| 55 | Chapter 10. In vivo measurements of blood flow and glial cell function with two-photon laser-scanning microscopy. <i>Methods in Enzymology</i> , <b>2008</b> , 444, 231-54                 | 1.7  | 33  |
| 54 | Action Potentials in Dendrites and Spike-Timing-Dependent Plasticity <b>2008</b> , 803-828   |      |     |
| 53 | Ultra-compact fiber-optic two-photon microscope for functional fluorescence imaging in vivo. <i>Optics Express</i> , <b>2008</b> , 16, 5556-64   | 3.3  | 213 |
| 52 | Optische Messung neuronaler Netzwerkdynamik in 3D. <i>E-Neuroforum</i> , <b>2008</b> , 14, 184-189   |      |     |
| 51 | Imaging cellular network dynamics in three dimensions using fast 3D laser scanning. <i>Nature Methods</i> , <b>2007</b> , 4, 73-9  | 21.6 | 293 |
| 50 | Calcium indicator loading of neurons using single-cell electroporation. <i>Pflugers Archiv European Journal of Physiology</i> , <b>2007</b> , 454, 675-88                                  | 4.6  | 109 |
| 49 | Spatial organization of neuronal population responses in layer 2/3 of rat barrel cortex. <i>Journal of Neuroscience</i> , <b>2007</b> , 27, 13316-28                                       | 6.6  | 198 |
| 48 | Dendritic spikes in apical dendrites of neocortical layer 2/3 pyramidal neurons. <i>Journal of Neuroscience</i> , <b>2007</b> , 27, 8999-9008  | 6.6  | 162 |
| 47 | New angles on neuronal dendrites in vivo. <i>Journal of Neurophysiology</i> , <b>2007</b> , 98, 3770-9   | 3.2  | 69  |
| 46 | Little strokes fill big oaks: a simple in vivo stain of brain cells. <i>Neuron</i> , <b>2007</b> , 53, 771-3   | 13.9 | 1   |

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|----|--|------|------|
| 45 | In vivo calcium imaging of neural network function. <i>Physiology</i> , <b>2007</b> , 22, 358-65   | 9.8  | 143  |
| 44 | Background synaptic activity is sparse in neocortex. <i>Journal of Neuroscience</i> , <b>2006</b> , 26, 8267-77  | 6.6  | 145  |
| 43 | Imaging input and output of neocortical networks in vivo. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , <b>2005</b> , 102, 14063-8  | 11.5 | 389  |
| 42 | Resting microglial cells are highly dynamic surveillants of brain parenchyma in vivo. <i>Science</i> , <b>2005</b> , 308, 1314-8   | 33.3 | 3750 |
| 41 | In vivo calcium imaging of circuit activity in cerebellar cortex. <i>Journal of Neurophysiology</i> , <b>2005</b> , 94, 1636-44  | 3.4  | 106  |
| 40 | Nonlinear anisotropic diffusion filtering of three-dimensional image data from two-photon microscopy <b>2005</b> , 5672, 44  |      | 1    |
| 39 | Deep tissue two-photon microscopy. <i>Nature Methods</i> , <b>2005</b> , 2, 932-40   | 21.6 | 2943 |
| 38 | Nonlinear anisotropic diffusion filtering of three-dimensional image data from two-photon microscopy. <i>Journal of Biomedical Optics</i> , <b>2004</b> , 9, 1253-64   | 3.5  | 51   |
| 37 | Novel approaches to monitor and manipulate single neurons in vivo. <i>Journal of Neuroscience</i> , <b>2004</b> , 24, 9223-7   | 6.6  | 36   |
| 36 | Boosting of action potential backpropagation by neocortical network activity in vivo. <i>Journal of Neuroscience</i> , <b>2004</b> , 24, 11127-36  | 6.6  | 87   |
| 35 | Sulforhodamine 101 as a specific marker of astroglia in the neocortex in vivo. <i>Nature Methods</i> , <b>2004</b> , 1, 31-7   | 21.6 | 639  |
| 34 | Lentivirus-based genetic manipulations of cortical neurons and their optical and electrophysiological monitoring in vivo. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , <b>2004</b> , 101, 18206-11 | 11.5 | 391  |
| 33 | Sindbis vector SINrep(nsP2S726): a tool for rapid heterologous expression with attenuated cytotoxicity in neurons. <i>Journal of Neuroscience Methods</i> , <b>2004</b> , 133, 81-90   | 3    | 65   |
| 32 | Distortion-free delivery of nanojoule femtosecond pulses from a Ti:sapphire laser through a hollow-core photonic crystal fiber. <i>Optics Letters</i> , <b>2004</b> , 29, 1285-7   | 3    | 81   |
| 31 | Miniaturized two-photon microscope based on a flexible coherent fiber bundle and a gradient-index lens objective. <i>Optics Letters</i> , <b>2004</b> , 29, 2521-3   | 3    | 185  |
| 30 | Supralinear Ca <sup>2+</sup> influx into dendritic tufts of layer 2/3 neocortical pyramidal neurons in vitro and in vivo. <i>Journal of Neuroscience</i> , <b>2003</b> , 23, 8558-67   | 6.6  | 185  |
| 29 | Ca <sup>2+</sup> imaging in the mammalian brain in vivo. <i>European Journal of Pharmacology</i> , <b>2002</b> , 447, 119-29   | 5.3  | 60   |
| 28 | New developments in multiphoton microscopy. <i>Current Opinion in Neurobiology</i> , <b>2002</b> , 12, 593-601   | 7.6  | 135  |



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|----|---|------|---------|
| 27 | Miniaturization of fluorescence microscopes using fibre optics. <i>Experimental Physiology</i> , <b>2002</b> , 87, 737-45.  | 4.4  | 64      |
| 26 | Enhanced two-photon excitation through optical fiber by single-mode propagation in a large core. <i>Applied Optics</i> , <b>2002</b> , 41, 2930-4   | 1.7  | 38      |
| 25 | Raising the speed limit--fast Ca(2+) handling in dendritic spines. <i>Trends in Neurosciences</i> , <b>2002</b> , 25, 438-41; discussion 441  | 13.3 | 15      |
| 24 | A miniature head-mounted two-photon microscope. high-resolution brain imaging in freely moving animals. <i>Neuron</i> , <b>2001</b> , 31, 903-12  | 13.9 | 470     |
| 23 | In vivo dendritic calcium dynamics in deep-layer cortical pyramidal neurons. <i>Nature Neuroscience</i> , <b>1999</b> , 2, 989-96   | 25.5 | 317     |
| 22 | Spread of dendritic excitation in layer 2/3 pyramidal neurons in rat barrel cortex in vivo. <i>Nature Neuroscience</i> , <b>1999</b> , 2, 65-73   | 25.5 | 195     |
| 21 | Competitive calcium binding: implications for dendritic calcium signaling. <i>Journal of Computational Neuroscience</i> , <b>1998</b> , 5, 331-48   | 1.4  | 63      |
| 20 | Fluctuations and stimulus-induced changes in blood flow observed in individual capillaries in layers 2 through 4 of rat neocortex. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , <b>1998</b> , 95, 15741-6 | 11.5 | 665     |
| 19 | Calcium influx during an action potential. <i>Methods in Enzymology</i> , <b>1998</b> , 293, 352-71   | 1.7  | 17      |
| 18 | Postsynaptic Ca <sup>2+</sup> influx mediated by three different pathways during synaptic transmission at a calyx-type synapse. <i>Journal of Neuroscience</i> , <b>1998</b> , 18, 10409-19   | 6.6  | 43      |
| 17 | Calcium dynamics associated with a single action potential in a CNS presynaptic terminal. <i>Biophysical Journal</i> , <b>1997</b> , 72, 1458-71  | 2.9  | 251     |
| 16 | Ca <sup>2+</sup> buffering and action potential-evoked Ca <sup>2+</sup> signaling in dendrites of pyramidal neurons. <i>Biophysical Journal</i> , <b>1996</b> , 70, 1069-81   | 2.9  | 497     |
| 15 | Spatial profile of dendritic calcium transients evoked by action potentials in rat neocortical pyramidal neurones. <i>Journal of Physiology</i> , <b>1995</b> , 487 ( Pt 3), 583-600  | 3.9  | 181     |
| 14 | Pre- and postsynaptic whole-cell recordings in the medial nucleus of the trapezoid body of the rat. <i>Journal of Physiology</i> , <b>1995</b> , 489 ( Pt 3), 825-40  | 3.9  | 353     |
| 13 | Calcium imaging   |      | 362-409 |
| 12 | High-density multi-fiber photometry for studying large-scale brain circuit dynamics   |      | 1       |
| 11 | Spatiotemporal refinement of signal flow through association cortex during learning   |      | 1       |
| 10 | Sensory and Behavioral Components of Neocortical Signal Flow in Discrimination Tasks with Short-term Memory   |      | 1       |

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| 9 | Whole brain optoacoustic tomography reveals strain-specific regional beta-amyloid densities in Alzheimer's disease amyloidosis models | 8 |
| 8 | Value-guided remapping of sensory circuits by lateral orbitofrontal cortex in reversal learning                                       | 1 |
| 7 | Database and deep learning toolbox for noise-optimized, generalized spike inference from calcium imaging                              | 8 |
| 6 | Brain mapping across 16 autism mouse models reveals a spectrum of functional connectivity subtypes                                    | 3 |
| 5 | Layer-specific integration of locomotion and concurrent wall touching in mouse barrel cortex  | 2 |
| 4 | Cortical excitation:inhibition imbalance causes abnormal brain network dynamics as observed in neurodevelopmental disorders           | 3 |
| 3 | The mesoSPIM initiative: open-source light-sheet mesoscopes for imaging in cleared tissue   | 4 |
| 2 | In vivo calcium imaging of CA3 pyramidal neuron populations in adult mouse hippocampus  | 2 |
| 1 | Dendritic integration of sensory and reward information facilitates learning  | 2 |